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EXAMINER	
GILLESPIE, BENJAMIN	
ART UNIT	**PAPER NUMBER**
1796	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/567,451	BLEUEL ET AL.	
	Examiner	Art Unit	
	BENJAMIN J. GILLESPIE	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 July 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 4 is rejected because it is unclear if "a catalyst" is the same as the alkaline catalyst; clarification is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-4, 6, 7-18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schilling et al ('759) in view of Waddington et al (2003/0100699). Schilling et al teach a method for producing rigid polyurethane foam comprising the reaction product of (A)

polyisocyanate and (B) polyether polyol in the presence of tertiary catalyst (Col 5 lines 39-60). The (Bi) polyether polyol is produced by alkoxylating hydroxyl-functional low molecular weight initiator with ethylene and/or propylene oxide at a temperature between 80°C and 140°C, and in the presence of alkaline catalyst (Col 3 lines 66-67; col 4 lines 1-3, 13-17). In particular, the initiator mixed is with a dissolving material consisting of (Bii) polyether polyol that has a functionality and hydroxyl number as low as 4, and 300 mg/KOHg respectively. (Col 2 lines 24-35; col 3 lines 4-6, 15-24; col 4 lines 23-26). The examiner takes the position that the dissolving material satisfies applicants' claimed "solvent" limitation.

4. Although the methodology of claim 4 is not disclosed by Schilling et al, (Bii) is also produced by alkoxylating a low molecular weight initiator in the presence of alkaline catalyst; as a result it would have been obvious to not remove said alkaline catalyst from (Bii) based on the motivation that it is also useful in producing (Bi), and by eliminating a removal step the overall process would become more efficient.

5. Regarding the ranges of claims 3, 13, and 14, patentees teach in example 1, that (Bii) is present relative to the low molecular weight initiator by a ratio of 1:1.9, and column 4 lines 37-44 explains that functionality, and ratio of (Bii):initiator controls the functionality of the resulting (Bi) compound, i.e. said ratio and functionality of (Bii) are result effective variables. Hence, it would have been obvious to arrive at applicants claimed range since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch,* 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

6. Regarding the ranges of claims 17 and 18, Schilling et al also teach that the resulting molecular weight of (Bi) is simply controlled by the amount of alkylene oxide included in the

reaction system, and since it is commonly known that molecular weight controls the rigidity of the resulting polyurethane, i.e. it is a result effective variable, it would have been obvious to arrive applicants claimed range since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch,* 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Finally, while tertiary amine catalysts are preferably included during the reaction of the polyether polyol and polyisocyanate, patentees fail to teach autocatalytic polyether polyol containing tertiary amine groups.

7. Waddington et al teach a method for producing rigid polyurethane foams, comprising the reaction product of polyisocyanate and polyether polyol (Abstract; paragraphs 2, 4). The polyether polyol is produced by alkyoxylating hydroxyl and/or primary/secondary amine initiator with ethylene oxide and/or propylene oxide in the presence of alkaline catalyst, and in particular the initiator preferably contains a tertiary amine compound (Paragraph 52). Waddington et al explain that by replacing standard low molecular weight initiator with the tertiary amine containing initiator, autocatalytic polyether polyol can be produced that eliminate the need for external tertiary amine catalyst, thereby eliminating unwanted smell attributed to said catalyst (Paragraphs 15-17). Important to note, in addition to hydroxyl functional initiator, Waddington et al teach compounds that correspond to diethylaminoethylamine, diethylaminopropylamine, and N-(2-dimethylaminoethyl)-N-methylethanolamine (Abstract).

8. Therefore it would have been obvious to substitute (Bi) of Schilling et al for the autocatalytic polyether polyol of Waddington et al based on the motivation said autocatalytic polyether polyol reduces unwanted odors while still maintaining sufficient catalytic activity required to produce the desired rigid polyurethane foam.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schilling et al ('759) in view of Waddington et al (2003/0100699) and in further view of Massen et al ('769). Aforementioned, Schilling et al in view of Waddington et al render obvious a method for producing autocatalytic polyether polyol, however patentees explain that inert organic solvents are preferably not present during the formation of (Bi) due to health concerns. Nevertheless, column 2 lines 24-30 states that said solvent is preferably not present in "large quantities," i.e. small amounts are permissible, and Schilling et al further disclose that such solvents are listed in Massen et al, such as toluene (Col 1 lines 15-18; Massen et al; col 3 lines 42-49). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include inert solvents, in the method of Schilling et al since patentees explain that small amounts are acceptable, and Schilling et al specifically directs the user's attention to such solvents.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schilling et al ('759) in view of Waddington et al (2003/0100699) and in further view of Nishioka et al (EP 376,602). Aforementioned, Schilling et al in view of Waddington et al render obvious polyurethane foam based on the reaction product of polyisocyanate and autocatalytic polyether polyol, wherein said polyether polyol is produced by alkoxylating low molecular weight initiator in the presence of alkaline catalyst, however the prior art fails to explicitly disclose a range of catalytic compound in the polyether polyol.

11. Nishioka et al teach polyurethane foams comprising the reaction of polyisocyanate and autocatalytic polyether polyol, and in particular the tertiary initiator is present by an amount ranging from 0.1 to 3 wt% based on all polyol (Abstract; page 1 lines 1-5; page 3 lines 48-50). Therefore it would have been obvious to include the same amount of tertiary amine group as

claimed by applicants based on the motivation it is disclosed by Nishioka et al as being the preferred amount in producing polyurethane foams from analogous reactants.

12. Claims 7, 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schilling et al ('759) in view of Waddington et al (2003/0100699) and in further view of Hinz et al ('969). Aforementioned, Schilling et al in view of Waddington et al render obvious rigid polyurethane foam based on the reaction product of polyisocyanate and autocatalytic polyether polyol, wherein said polyether polyol is produced by alkoxylating low molecular weight initiator in the presence of alkaline catalyst, however the prior art fails to disclose a range of reaction pressures.

13. Hinz et al teach a method for producing rigid polyurethane foams comprising the reaction product of polyether polyol and polyisocyanate, wherein the polyether polyol is autocatalytic (Abstract; col 11 lines 19-20). The polyether polyol is produced by alkoxylating a low molecular weight initiator compound with ethylene, and/or propylene oxide in the presence of alkaline catalyst, wherein said initiator contains at least one tertiary amine group. (Col 1 lines 31-34; col 4 lines 1-10; col 5 lines 12, 15-16; examples 1 and 2). Important to note is that Hinz et al teach the alkoxylation reaction may take place at temperatures ranging from 100°C and 130°C, and pressures ranging from atmospheric up to 20 bar (Col 5 lines 21-48). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to operate the reaction of Schilling et al at the same process parameters of claim 19 based on the motivation Hinz et al discloses them being suitable reaction pressures for making an analogous polyether polyol at 100°C to 130°C, and the resulting polyether polyol is useful in producing rigid polyurethane foam.

14. Important to also note, in addition to the compounds disclosed by Waddington et al, Hinz et al teach a diverse selection of low molecular weight initiators for producing the autocatalytic polyether polyol (Col 4, lines 1-67; col 5 lines 14). Therefore, it would have been obvious to utilize any of the low molecular weight initiators disclosed by Hinz et al based on the motivation they are all disclosed as being effective in producing autocatalytic polyether polyol useful in producing rigid polyurethane foam, and it is prima facie obvious to include a known ingredient for its known function; *In re Linder* 173 USPQ 356; *In re Dial et al* 140 USPQ 244.

Response to Arguments

15. Applicant's arguments filed 7/28/2008 with respect to the rejection of claims 1-20 have been considered but are not persuasive. Applicants argue the claimed invention is patentable over the prior art since Schilling et al teach that the initiator is only suspended in said polyether; the mixture of Schilling et al is never a solution, therefore the polyether is not a solvent.

16. While, the examiner agrees that Schilling et al disclose the mixture as a suspension, it is important to note the teachings of column 3 lines 53-57, which state that the mixture may also be a solution. What's more, since the initiator starts as a solid, and the resulting solution is a liquid, the examiner maintains that the polyether is the solvent, and the initiator is the solute.

17. Applicants' also argue that claim 5 is patentable over the prior art because Schilling et al teach the polyether is produced "without the need" of solvent. In response, the examiner would like to first point out "without the need" is optional language, and while solvent may not be required, clearly "without the need" allows for the inclusion of inert solvent. Furthermore, the phrase: "without the need" needs to be considered in context with all other relevant language, which states the polyether is produced "without the need for large quantities of [solvent]." By

including the phrase "for large quantities" one of ordinary skill would understand that Schilling et al do not definitively exclude inert solvent, but instead require that only small amounts of it be used.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

19. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN J. GILLESPIE whose telephone number is (571)272-2472. The examiner can normally be reached on 8am-5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

21. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rabon Sergent/
Primary Examiner, Art Unit 1796

B. Gillespie